EUB Alberta Energy and Utilities Board

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Directive 028

Applications for Power Plants, Substations, Transmission Lines, and Industrial System Designations

(formerly Guide 28)

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1 How to Use This Directive

1.1 What's New in This Directive

This new *Directive 028* replaces *Guide 28*. It also replaces the first version of the *EUB Application Form for Small Electric Generator* with an updated version.

The new *Directive 028* incorporates the requirements and the process to apply to the Alberta Energy and Utilities Board (EUB) for the necessary approvals for the construction or alteration and operation of power plants, substations, and transmission lines pursuant to the *Hydro and Electric Energy Act* and the *Electric Utilities Act*. Guidelines for industrial system designation applications are also now included in the directive. The level of detail required may vary depending on the scope and complexity of your proposed development. Applicants are expected to know and understand requirements and file accurate and complete applications.

If the project involves other nonelectric facilities, you may also be required to submit an application to the EUB for approval of these facilities. For example, you may need to file an application pursuant to the *Pipelines Act* if the project requires a new gas pipeline, the *Coal Conservation Act* if the project requires extraction of coal, or the *Oil Sands Conservation Act* if the project requires extraction of bitumen.

This directive is effective December 22, 2003, as stated in *Bulletin 2003-40*.

1.2 Application Required

Anyone intending to construct, connect, operate, or alter electric facilities (i.e., power plants, substations, transmission lines, or industrial system designations) must file an application with the EUB, pursuant to the *Hydro and Electric Energy Act* and the *Electric Utilities Act* in accordance with this directive.

In order for the EUB to register a new application by a Transmission Facility Owner (TFO) or Market Participant, the Alberta Electric System Operator (AESO) must have obtained EUB approval for the need as described in Section 34 of the *Electric Utilities Act* (EUA). In addition, when the AESO directly assigns a project to a TFO or Market Participant, a confirmation of the direct assignment from the AESO **in writing** must accompany the application.

1.3 Application for Exemption

If you are proposing alterations to existing electric facilities and you consider the alterations to be minor, you must contact the EUB and explain the nature of your proposal. The EUB will assess whether an application is required or whether your proposal can be processed using a Letter of Enquiry pursuant to Section 11 of the *Hydro and Electric Energy Regulations*.

If you plan to generate electric energy solely for your own use, you must contact the EUB and explain the nature of your proposal. The EUB will assess whether an application is required or whether your proposal is exempted pursuant to Section 13 of the *Hydro and Electric Energy Act*.

If you plan to transmit electric energy over your own land and solely for your own use or within an industrial system that has been designated by an EUB approval, you must contact the EUB and explain the nature of your proposal. The EUB will assess whether an application

is required or whether your proposal is exempt pursuant to Section 16 of the *Hydro and Electric Energy Act*.

1.4 Application Process

Step 1: Participant Involvement Information

Prior to filing your application, you must complete the participant involvement program (see *Guide 56: Energy Development Applications*). You must include documentation describing your notification and involvement program in your application. This must include information indicating that you have contacted and advised all potentially directly and adversely affected parties, provided them with a fair opportunity to learn about your planned application, and given them the opportunity to submit their views to you and to the EUB.

Step 2: Filing

You must provide six paper copies of your application, including Schedule 1, unless otherwise specified. Additional copies of the application may be required. An electronic copy of the application may also be required. For data retention purposes, please provide Schedule 1 printed on one side only. A Business Associate (BA) code must be shown on your application. To obtain a BA code, call (780) 422-1395.

If the application proceeds to a hearing or is otherwise complex, you may be asked to provide as many as 30 additional copies. See the EUB's *Rules of Practice* (available on the EUB Web site www.eub.gov.ab.ca) for additional information on the hearing process.

If your application is complete, the EUB assigns it a unique application number and registers it. The current status of the application is then available for viewing on the EUB Web site under the Integrated Application Registry (IAR).

Submit the application to

Alberta Energy and Utilities Board
Utilities Branch
640 – 5 Avenue SW
Calgary AB T2P 3G4

The EUB no longer processes any application that contains major deficiencies. The application is returned to the applicant with an explanation and the file is closed. An example of a major deficiency is the omission of key information, such as neglecting to include participant involvement information or a noise impact assessment when applying to build a power plant in proximity to residences.

If your application has minor deficiencies, the EUB provides you with an explanation and gives you a reasonable time to address the deficiencies. Failure to respond in the stated time frame results in the EUB returning your application with written notification of the reason for the rejection.

If you are proposing a major development, such as a large coal-fired power plant or a high-voltage transmission line of significant length, the information requirements in this directive may not be sufficient to assess the full impact of your project. In that case, you should consult with the EUB and Alberta Environment (AENV) in the initial stages of preparing your application to determine the level of detail required.

The EUB requires applicants to address all concerns raised by potentially directly and adversely affected parties.

If the parties cannot come to resolution, the EUB's Appropriate Dispute Resolution (ADR) program (see *IL 2001-1: Appropriate Dispute Resolution [ADR] Program and Guidelines for Energy Industry Disputes*) has options for help in resolving issues, including negotiations, facilitation, mediation, and arbitration. EUB staff, if requested, can assist in explaining EUB rules and in facilitation.

If you conclude that further discussion is unlikely to resolve issues, you should inform the EUB, outlining the concerns and the steps you have taken to resolve problems.

2 Schedule 1 Form and Guide

Applicant General Information

EUB Alberta Energy and Utilities Board

Directive 028 – Schedule 1
Applicant General Information

1. Registration

Day _____ Month _____ Year _____

EUB USE ONLY
Registration Number _____ **Registration Date: Day** _____ **Month** _____ **Year** _____

Company Name _____ BA Code _____

Contact Person (N/A ☐) _____
Last Name First Name Signature

Telephone (___) _____ Fax (___) _____

E-Mail Address _____

Mailing Address _____ _____

Consultant (N/A ☐) _____
Company Name

Consultant Contact Person _____
Last Name First Name Signature

Telephone (___) _____ Fax (___) _____

E-Mail Address _____

Mailing Address _____ _____

2. Project Overview

1. Identify what this application is for:

   Transmission Line ☐ Substation ☐ Power Plant ☐ Interconnection ☐

   Industrial System Designation ☐

2. Brief description: _____

3. Provide the name(s) of all other companies having ownership in the project, details of their incorporation, and the share in the project that each would have.

_____

_____

_____

4. Have you conducted the participant involvement program as detailed in *Guide 56*? Yes ☐ No ☐

5. Are there outstanding public or industry objections and/or concerns? Yes ☐ No ☐

6. Have you completed a noise impact assessment, as required by *Interim Directive (ID) 99-8: Noise Control Directive* (for power plant applications only)? Yes ☐ No ☐ N/A ☐

7. Has the AESO directly assigned the transmission line or substation project to you? Please include a written confirmation of the AESO direct assignment letter per Section 35 of the EUA. Yes ☐ No ☐ N/A ☐

Note: For applications for power plants or interconnection, proceed to Section 3 of *Directive 028*. For applications to construct or alter a substation or transmission line, proceed to Section 5 of *Directive 028*. For applications regarding industrial system designation, proceed to Section 7 of *Directive 028*.

File six (6) copies of this application package, including this Schedule 1 on each copy.
Submit applications to: Alberta Energy and Utilities Board, Utilities Branch, 640 – 5 Avenue SW, Calgary AB T2P 3G4

Directive 028-Schedule 1 Form 2003-12 **Alberta Energy and Utilities Board, 640 – 5 Avenue SW, Calgary AB T2P 3G4**

2 Schedule 1—Guide

When to Use Schedule 1

Schedule 1: Applicant General Information Form is required for all application types covered in *Directive 028*, except for those for a small power plant (less than 1 MW). If you are applying for a small power plant, you may use Schedule 2 (Short Form) (proceed to Section 4).

Schedule 1 provides information identifying application type and key items required for electric power plant, transmission line, substation, and industrial system designation applications.

You may include applications for more than one facility in one package using a single Schedule 1.

Part 1: Registration

Date

Enter the date on which you will file this application with the EUB.

Company Name

Enter your company name and BA code.

As applicant, your company is responsible for the accuracy and completeness of this application and all supporting technical information.

Contact Person

Enter the name of the person responsible for preparing this application. The EUB will direct correspondence and questions about the application to this person. If a consultant submits the application on your behalf, check N/A.

The contact person must sign as indicated.

Any EUB approval, permit, licence, or order resulting from this application will be issued in the applicant's name and mailed to the contact person, unless the application is prepared by a consultant (see below).

Telephone/Fax

Enter the telephone number and facsimile number of the contact person, including area code.

E-mail Address

Enter the e-mail address of the contact person, if available.

Mailing Address

Enter the company's complete mailing address, including postal code.

Consultant

Enter the company name of the consultant submitting an application on the company's behalf. If a consultant is not being used, check N/A.

A consultant is a person retained by the applicant to prepare the application. The EUB considers the applicant to be responsible for the accuracy and completeness of the application even when it is submitted on the applicant's behalf by the consultant.

Consultant Contact Person

Enter the name of the person responsible for preparing this application. The EUB will direct correspondence and questions about the application to this person.

The consultant's contact person must sign as indicated.

Any EUB approval, permit, licence, or order resulting from this application will be issued in the applicant's name and mailed to the consultant's contact person.

This person must ensure that the applicant receives a copy of the approval, permit, licence, or order.

Telephone/Fax

Enter the business telephone number and facsimile number of the consultant's contact person, including area code.

E-mail Address

Enter the e-mail address of the contact person, if available.

Mailing Address

Enter the consultant's complete mailing address, including postal code.

Part 2: Project Overview

1. Identify what this application is for.

Check the appropriate box(es) (transmission line, substation, power plant, interconnection, or industrial system designation).

2. Brief description

Describe what this application is for and the reasons for your application (for example, a transmission line to provide electric supply for an industrial complex).

3. Provide the name(s) of all companies having ownership in the project, details of their incorporation, and the share in the project that each would have.

Provide details of all companies having ownership in the project. Include the incorporation details for each company and its percentage share of the project.

4. Have you completed the participant involvement information?

Check Yes if you have. Refer to EUB *Guide 56*.

Check No if you have not completed this step and provide an explanation as to why not in your application.

You must also consider whether unique situations exist that warrant additional notice. When the EUB reviews your application, it will also assess any unusual aspects that might increase notification requirements. The EUB also may serve formal notification if the project scope or location requires additional steps to ensure compliance with Section 26 of the *Energy Resources Conservation Act*.

5. Are there outstanding public or industry objections and/or concerns?	Check Yes if there are outstanding objections and/or concerns regarding the proposed project. Check No if there are no outstanding objections and/or concerns regarding the proposed project.
6. Have you completed a noise impact assessment, as per *Interim Directive (ID) 99-8* (for power plants only)?	Check Yes if you are applying for a power plant and have completed a noise impact assessment, as required by *ID 99-8: Noise Control Directive*. Include the assessment with your application. Check No if you are applying for a power plant and have not completed a noise impact assessment. Include an explanation as to why not in your application. Check N/A if you are not applying for a power plant.
7. Has the AESO directly assigned this transmission line or substation project to you under Section 35 of the EUA? Did you include a copy of the direct assign letter in your application?	Check Yes if you are applying for a transmission line or a substation and the AESO has directly assigned this project to you, as detailed in Section 5 and 6. Include a copy of the direct assignment letter from AESO with your application. Check No if you are applying for a transmission line or a substation but the AESO has not directly assigned this project to you, and include an explanation as to why not in you application. Check N/A if you are not applying for a transmission line or a substation.

Go to Section 3 if you are applying for an electric power plant with or without interconnection or for the interconnection of a power plant already approved or applied for.

Go to Sections 5 and 6 if you are applying for a transmission line or substation.

Go to Section 7 if you are applying for an industrial system designation.

3 Requirements for All Power Plant Applications 1 Megawatt (MW) or Greater

If you are applying for construction, operation, or alteration of a power plant 1 MW or greater, you must include the following background and technical information. Be sure to attach a covering *Directive 028* Schedule 1 with your application. If your application is for a small electric power plant (less than 1 MW), go directly to Schedule 2: Short Form (Section 4).

3.1 General Information

3.1.1 Legislation

1) Identify the sections of the *Hydro and Electric Energy Act* (Revised Statutes of Alberta 2000) under which the application is made.

2) Identify any other acts (e.g., Electric Utilities Act, Environmental Protection and Enhancement Act) that may affect your project.

3) State the approvals that you are applying for from the EUB.

4) Provide a list of existing approvals for facilities directly affected by this project, if any.

5) Submit a copy of approval from local jurisdictions (e.g., municipal districts, counties).

6) Provide a list of parties that may be affected by your project, confirm that these parties have no concerns regarding your application, and indicate which other agreements are necessary to carry out your project.

7) Provide a copy of your approvals from NAV CANADA and Transport Canada if you are submitting an application for a wind power plant.

8) Provide a copy of your approval from Alberta Transportation if you are applying for a wind power plant that is within 300 metres (m) of a numbered highway.

9) Confirm that you have made application to Alberta Environment (AENV), if applicable, and list all other government departments and agencies from which approval is required.

10) Confirm that consultation has taken place with Alberta Community Development. If a historical and/or archaeological impact assessment is required, submit a summary describing any historical or archaeological sites and parks affected by your proposal.

11) Provide the AESO-assigned asset identification code, if available.

3.1.2 Project Description

12) Provide the legal description of the proposed power plant site (Legal Subdivision [LSD], Section, Township, Range, Meridian) and connection point, if applicable.

13) For wind power plant applications, provide the longitude and latitude coordinates (within 50 m) for each structure supporting a wind-powered generator.

14) Describe the project site and the regional setting of the development.

15) Describe the number of generating units and the total capacity (kilovoltampere [kVA], megavoltampere [MVA]) for the project.

16) Give a general overview of environmental impacts (such as noise, visual, emissions, land disturbances, surface water).

3.1.3 Participant Involvement Information

17) Describe the participant involvement information. (See *Guide 56* on Participant Involvement Information.)

18) List all owners, occupants, and residents on lands within 2000 m of the project area, as well as other interested parties, that you contacted as part of your participant involvement information.

19) Supply a mailing list of those parties mentioned in (18) above, complete with two sets of mailing labels.

20) Identify any parties who expressed concerns about the project and the specifics of their concerns.

21) Summarize discussions held with potentially directly and adversely affected parties.

22) If potentially directly and adversely affected parties raised any concerns, describe how you dealt with or will deal with them.

23) For those potentially directly and adversely affected parties identified above, include a confirmation of resolution of the concerns, if applicable.

3.1.4 Land Use

24) Describe the existing land use.

25) Discuss potential siting and land-use issues.

26) Describe how the power plant will comply with the standards outlined in Sections 8.090 and 8.170 of the Oil and Gas Conservation Regulations.

3.2 Technical Information

3.2.1 General Operating Information

27) Provide a noise impact assessment, in accordance with EUB *ID 99-8: Noise Control Directive*.

28) Provide details of your power generating equipment and associated facilities, such as make, model, and nominal capacity.

29) Present the estimated power plant heat rates, efficiency, and details of cooling system.

30) State the fuel requirements of the power plant, including type, source, and method of handling, transportation, and environmental effects.

31) State the projected annual electric production.

3.2.2 Maps, Drawings, and Other Documents

32) Provide a legible plant site drawing showing all major equipment components.

33) Provide a legible map showing the power plant site boundaries and land ownership, as well as any residences and dwellings within 2000 m of the boundaries.

34) Provide a legible map of the project area suitable for use in a public notice.

3.2.3 Construction Schedule

35) Supply the expected in-service dates, and describe ramifications if the approval date cannot be met.

3.2.4 Environmental Information

36) Indicate the plant's emission rates in nanograms per joule (ng/J), as well as mass emissions in tonnes per year (t/y), of nitrogen oxides (NO_x), sulphur dioxide (SO_2), and particulate matter, and state whether the emissions will comply with the Alberta Source Emission Standards.

37) State whether the proposed plant will comply with the Alberta Ambient Air Quality Guidelines for ground-level concentrations of pollutants.

38) Provide the environmental impact assessment as an appendix to your application, if one has been conducted.

You must obtain approval from AENV for thermal power plant facilities greater than 1 MW in total capacity. An environmental impact assessment (EIA) is mandatory for thermal power plant facilities that use nongaseous fuel and are greater than 100 MW in total capacity; an EIA may be required for other power plant facilities regardless of total capacity. When an EIA is not mandatory, AENV will determine if it is necessary, based on the specific nature of the project. You should consult with the EUB and AENV in the initial stages of preparing your application to determine the level of detail required.

3.3 Additional Information

3.3.1 For Power Plants (without application for connection)

39) If the power plant is to be connected at transmission voltage level (generally greater than 25 kV), the following information must be provided:

- local area load flow studies to show transmission system adequacy to support the new power plant
- draft functional specifications for system access
- cost estimate for the interconnection and the required system upgrades
- proponent's contribution, if any, toward the capital cost of the interconnection

3.3.2 For Power Plants (including application for connection at the distribution system)

40) Provide a copy of the agreement with the local distribution company, the LSD of the interconnection point, and an electric single-line diagram showing the interconnection point with the company. This agreement must reflect that the interest of current

customers of the distribution company are served, that provision for future customer load has been made, and that both parties (generator and wire owner) are satisfied with the arrangement and its implications.

3.3.3 For Power Plant Application (including application for connection at transmission voltage level) or Application for Connection Order at the Transmission Level for an Already Approved Power Plant

41) Provide local area load flow studies, including contingency analysis, with sufficient detail to demonstrate that the proposed interconnection would conform to planning criteria. Present the report for these studies with sufficient graphical outputs, which should be labelled and indexed to provide clarity as to what was studied.

42) For power plants with total capacity of 70 MW or larger, provide dynamic studies to determine the impact of the new generation on the transient and dynamic stability of the Alberta Interconnected Electric System. These dynamic studies should include system response to close-in and worst-case three-phase faults with and without the new plant addition to show the relative system performance. Study results should include macro-system quantities, such as machine angles, major bus voltages, major line active and reactive power flows, and system frequency. Present the report for the studies with sufficient graphical outputs labelled and indexed to provide clarity as to what was studied. For power plants with total capacity over 10 MW but less than 70 MW, the EUB, in consultation with the AESO, will assess the need for dynamic studies.

43) For wind farms, provide details how dynamic voltage control is provided at the point of interconnection. Details should include control block diagrams of the voltage control system and time domain responses to illustrate dynamics and stability of the voltage control system.

44) Provide short circuit levels at substations near the proposed power plant connection.

45) Provide final functional specifications.

46) Include a cost estimate for the connection and required system upgrades.

47) Explain proponent's contribution, if any, toward the capital cost of the interconnection.

4 Schedule 2 Form and Guide

Application for a Small Power Plant

EUB Alberta Energy and Utilities Board

Directive 028 – Schedule 2 (Short Form)
Application for a Small Power Plant Less than 1 MW

Pursuant to Sections 11 and 18 of the *Hydro and Electric Energy Act*

1. Registration

Day _____ Month _____ Year _____ AESO-Assigned Asset ID Code: _____

EUB USE ONLY **Registration Day** _____ **Month** _____ **Year** _____

Company Name _____ BA Code _____

Company Contact Person _____

Company Address _____

Telephone (___) _____ Fax (___) _____

Power Plant Operator/Owner (if different from applicant) _____

Address _____

Operator Contact Person _____

Telephone (___) _____ Fax (___) _____

2. Project Description

1. Plant description _____
2. Legal description of proposed plant site (and coordinates for each wind-generating unit, if applicable):

_____

_____

3. Name plate capacity _____ kW
4. Number of units _____
5. Type of generator _____
6. Type of fuel _____
7. Projected annual electric production _____ kWh
8. Expected plant-in-service date _____
9. Utility company to be connected to _____
10. Agreement from utility company for connection: Yes ☐ No ☐

    If Yes, the legal description of the connection point is _____

    If No, state how you will achieve connection to the Alberta Electric System _____

    _____
11. Voltage level of connection _____
12. Is the energy produced to be used solely by the power plant owner? Yes ☐ No ☐
13. If the power plant owner does not use all the energy produced, that not used will be sold to

    Alberta Power Pool ☐ Other Customers ☐
14. Will the plant meet the Alberta Ambient Air Quality Guidelines (thermal plants only)? Yes ☐ No ☐

(continued)

15. Supporting documents attached:

1) Plant site plot plan and electric single-line diagram. Yes ☐ No ☐

2) Noise impact assessment, in accordance with EUB *Interim Directive (ID) 99-8*. Yes ☐ No ☐

3) Statement that applicant has completed the participant involvement information and that there are no objections. Yes ☐ No ☐

4) Confirmation that applicant has submitted an application for a development permit from the appropriate municipal district or county and that applicant has submitted an application for approval from NAV CANADA and Transport Canada if the application is for the approval of a wind power plant. Yes ☐ No ☐

5) Confirmation that applicant has submitted an application for approval from Alberta Transportation for a wind power plant located within 300 m of a numbered highway. Yes ☐ No ☐

6) Confirmation that the proposed plant will comply with *Oil and Gas Conservation Regulations*, Sections 8.170 and 8.090. Yes ☐ No ☐

File six (6) copies of this application, including this Schedule 2 (Short Form).

Signature: _____ Date: _____

Schedule 2 (Short Form): Application for a Small Power Plant—Guide

When to Use Schedule 2

If you are applying for a small power plant (less than 1 MW), you may use Schedule 2 (Short Form). For all other applications for power plants and transmission lines or substations, you must use Schedule 1.

Part 1: Registration

Date

Enter the date on which you will file this application with the EUB.

AESO-Assigned ID Code

Enter the asset identification (ID) code assigned by the AESO, if available.

Company Name

Enter your company name and BA code.

B.A. Code

As the applicant, your company is legally responsible for the accuracy and completeness of this application and all supporting technical information. Upon approval, the company becomes the approval holder, is subject to the conditions set out in an EUB order, and bears the responsibility for implementation, operations, and compliance.

Company Contact Person

Enter the name of the person authorized by your company to be responsible for this application and to act on your company's behalf. The EUB will consider the action and decisions of this individual to represent the actions and decisions of your company.

Any EUB approval, permit, or order resulting from this application will be issued in the company's name and sent to the contact person.

This person must ensure that the applicant receives a copy of the approval, permit, or order.

Company Address

Enter the company's complete mailing address, including postal code.

Telephone/Fax

Enter the business telephone number and facsimile number of the contact person, including area code.

Power Plant Operator/Owner (if different from applicant)

Enter the name of the operator or owner of the power plant, if different from the applicant.

Address

Enter the address of the power plant operator or owner, including postal code.

Operator Contact Person	Enter the name of the person and company responsible for preparing this power plant application. The EUB will direct correspondence and questions about the application to this person. Any EUB approval, permit, or order resulting from this application will be issued in the applicant's name and mailed to the contact person. This person must ensure that the applicant receives a copy of the approval, permit, or order.
Telephone/Fax	Enter the business telephone number and facsimile number of the contact person, including area code.

Part 2: Project Description

1. Plant description	Explain the type of power plant you are applying for (e.g., wind turbine, hydro plant, gas plant).
2. Legal description of proposed plant site	Enter the legal description of the proposed power plant site. For wind power applications, provide the longitude and latitude coordinates (within 50 m) for each structure supporting a wind-powered generator.
3. Name plate capacity	Enter the power plant capacity in kilowatts (kW).
4. Number of units	Enter the number of individual generating units that make up the total power plant capacity.
5. Type of generator	State the type of generator you are proposing (e.g., induction, synchronous, fuel cell).
6. Type of fuel	State the type of fuel used to supply the power plant.
7. Projected annual electric production	Enter the projected amount of electricity you expect to produce annually in kilowatt-hours (kWh).
8. Expected plant-in-service date	Enter the date you expect the plant to be in service.
9. Utility company to be connected to	Enter the name of the utility company that your power plant will be connected to.
10. Agreement from the utility company for connection	Check Yes if you have a connection agreement with the utility you will be connected to. • If Yes, enter the legal description of the connection point and attach written confirmation from the company. • If No, state how you will achieve connection to the Alberta Electric System.
11. Voltage level of connection	Enter the voltage level at the interconnection point.

12. Is the energy produced to be used solely by the power plant owner?	Check the appropriate box. (No means that all or some of the energy produced will be supplied to the Alberta Electric System.)
13. If the power plant owner does not use all the energy produced....	If the power plant owner does not use all the energy produced, check the appropriate box to indicate whether the energy not used will be sold to the Alberta Power Pool or to other customers.
14. Will the plant meet the Alberta Ambient Air Quality Guidelines (thermal plants only)?	Check Yes if dispersion modelling predicts that the Alberta Ambient Air Quality Guidelines will be met. Otherwise, check No.
15. Supporting documents	Next to each of the following required documents, check Yes if you have attached it to this application: 1) Plant site plot plan and electric single-line diagram 2) Noise impact assessment, in accordance with EUB *Interim Directive (ID) 99-8* 3) Statement that you have conducted the public notification and involvement program as detailed in the Public Notification and Involvement Guidelines (Section 6) and that there are no public objections and/or concerns 4) Confirmation that you have submitted an application for a development permit from the appropriate municipal district or county and that you have submitted an application for approval from NAV CANADA, Alberta Transportation, and Transport Canada if your application is for the approval of a wind power plant 5) Confirmation that applicant has submitted an application for approval from Alberta Transportation for a wind power plant located within 300 m of a numbered highway 6) Confirmation that the proposed plant will comply with the *Oil and Gas Conservation Regulations*, Sections 8.090 and 8.170 Check No if you are not attaching an item, and provide an explanation as to why the supporting document is not included.
Signature	Be sure to sign and date this form upon completion.

5 Requirements for Needs Identification Application to Construct or Alter a Substation or Transmission Line

In accordance with the *Electric Utilities Act* (EUA), the process for obtaining approval for transmission projects has changed. The most significant change is that the Alberta Electric System Operator (AESO) is now responsible for justifying the need for the project. This obligation is set out in Section 34 of the EUA and is referred to in this directive as the AESO needs identification application. Section 34 outlines the process for the AESO to submit a needs identification application to the EUB. This directive sets out the details to be included in such an application.

AESO needs identification applications are required for transmission projects that result in an expansion or enhancement to the Alberta Interconnected Electric System. They are not required for maintenance projects. In addition, the information requirements set out below may not be applicable in all cases; they vary with the complexity and size of the project.

AESO needs identification applications should address the following background and technical information requirements.

5.1 AESO Needs Identification Application Requirements

5.1.1 Describe the nature of the constraints or conditions affecting the operation of the existing transmission system by providing the following information:

1) Last five-year summer and winter peak loads recorded and, as a minimum, a five-year peak load forecast for the area of the proposed transmission expansion or enhancement

2) System study results, e.g., load-flow diagrams, describing the constraint or condition affecting the operation of the existing transmission system where the proposed transmission expansion or enhancement is to be located; outline the planning criteria used for the assessment

3) The method to determine and the magnitude of the transfer-out capability of the transmission system prior to and subsequent to the addition of the proposed transmission expansion or enhancement and for any alternatives assessed

4) Short circuit levels of all substations in the area under consideration before and after the proposed expansion or enhancements are completed

5.1.2 Provide comparisons between alternatives considered and the proposed expansion or enhancement regarding the following:

5) Details of the proposed expansion or enhancements and alternatives, including economic assessment, capital costs, and overall system development plan for the area under consideration

6) Rating of the new substation and/or transmission lines(s) for the spectrum of operating conditions expected

7) Expected (reductions in) transmission system losses

8) System performance by way of load flow studies, stability studies, reactive constraint studies, and other necessary studies

9) Transmission Must Run TMR impacts

10) Substation configuration

11) Transmission circuit configuration and conductor size and arrangement

12) Economic and technical consideration of the transmission line corridors, including
    - capital cost comparison of the transmission line corridors
    - high-level landowner and/or agricultural issues
    - initial determination of right-of-way width and cost

5.1.3 Explain AESO's recommendation of the preferred alternative, including

13) the rationale for the alternative

14) the implementation schedule

15) how the recommended alternative fits the AESO's long-term plan for Alberta's transmission system

6 Transmission Facility Owners or Market Participants Requirements

If you are applying to construct or alter a substation or transmission line, you must include the following background and technical information. Be sure to attach a covering *Directive 028* Schedule 1 with your application.

6.1 General Information

6.1.1 Legislation

1) Identify the sections of the Hydro and Electric Energy Act (Revised Statutes of Alberta 2000) under which the application is made.

2) Identify any other acts (e.g., Electric Utilities Act, Environmental Protection and Enhancement Act) that may affect the proposed project.

3) State the approvals that you are applying for from the EUB.

4) Where existing facilities are being altered, state the existing EUB Board orders (i.e., approvals, permits, and licences) for each facility.

5) Provide a copy of your application for approval to local jurisdictions (e.g., municipal districts, counties).

6) Provide a list of companies that may be affected by your project, confirm that these companies have no concerns regarding your application, and indicate which other agreements are necessary to carry out your project.

6.1.2 Project Description

7) Provide a description of the proposed project.

8) Provide a copy of the AESO Direct Assignment letter pursuant to Section 35 of the EUA.

9) Give the dates by which both the approval and the proposed facilities are required; state the ramifications if they are not available at that time.

6.1.3 Alternative Solutions

10) Describe any transmission line routing alternatives to the proposal and compare the relative impacts (environmental, social, and economic) of these alternatives with the proposal.

6.1.4 Participant Involvement Information

11) Describe the participant involvement information that you have conducted. The public notification should include all participants within 800 metres.

12) List all owners, occupants, and residents on lands within the project area, as well as other interested parties, that you contacted as part of your public notification and involvement program.

13) Supply a mailing list of those in (12) above, complete with two sets of mailing labels.

14) Identify any parties who expressed concerns about the project and the specifics of their concerns.

15) Summarize discussions held with potentially directly and adversely affected parties.

16) If potentially directly and adversely affected parties raised any concerns, describe how you dealt with or will deal with them.

17) For those potentially directly and adversely affected parties identified above, include a confirmation of resolution of the concerns, if applicable.

6.2 Technical Information

6.2.1 General Operating Information

18) Describe the design and operating voltage of the transmission line and/or substations.

19) Describe the capacity of the transmission line for the spectrum of expected operating conditions and the expected transmission line losses.

20) Describe conductor size and arrangement selected and the basis for conductor selection.

21) Describe the proposed structure type, including height and spacing; if more than one type of structure is proposed, state where each type will be used.

22) State the right-of-way width and the basis for determining the width.

23) Describe all major substation equipment being applied for and list the final equipment complement in the substation.

24) Describe the switching and protection features of the proposed facilities.

25) Describe the electrical interaction of proposed lines with other facilities, such as pipelines, telephone, radio, and television transmission facilities, and surface structures.

26) Describe the changes to existing facilities that would be required to accommodate the proposed facilities.

6.2.2 Maps, Drawings, and Other Documents

27) Provide a legible map defining the study area and state the reasons for the chosen area.

28) Provide legible maps and drawings of the proposed facilities showing
- the preferred transmission line route and any alternative routes;
- right-of-way widths;
- location of the transmission line on the right-of-way;
- location of the transmission line relative to property lines; and
- mile (kilometre) points along each transmission line route.

29) Provide legible maps and/or air photo mosaics upon which the proposed transmission line route or routes have been imposed and showing the residences, landowner names, and major land-use and resource features (e.g., vegetation, topography, soil type, existing land use, existing rights-of-way, existing or potential archaeological sites, and superficial and mineable resources).

30) Provide a legible map of the project area suitable for use in a public notice.

31) Provide an electric single-line diagram or switching map showing new facilities in place in the system. In the case of a substation, provide an electric single-line diagram and a substation layout, including major items of equipment and the fenced boundaries of the station.

6.2.3 Construction Schedule

32) Discuss the construction schedule, equipment and method of construction, and method of eventual right-of-way maintenance.

6.2.4 Environmental Information

Approval from Alberta Environment (AENV) may be required. You should contact AENV directly to ascertain if such is the case. All applications must confirm your intent to comply with AENV's *Guide for Transmission Lines*, pursuant to the *Environmental Protection and Enhancement Act* and *Regulations*.

Each application must include environmental information, with the level of detail appropriate to the impacts created by the project. The EUB judges the detail on a project-by-project basis. As a general rule, the EUB expects applications for higher-voltage transmission lines of significant length to be more detailed. In some instances, an environmental impact assessment (EIA) may be required.

33) For right-of-way clearing and maintenance, provide a copy of the Conservation and Reclamation Plan, as required by AENV (if applicable).

34) Landscape plan—indicate those areas that require screening or landscaping, and the measures to be used.

35) Aesthetics—indicate those areas that have been identified as significant viewpoints, and describe the measures proposed to minimize the impact of towers and rights-of-way within the view area.

36) Tower location—indicate the flexibility available in locating towers to reduce the inconvenience to residents and their day-to-day activities.

37) Archaeological and historical impacts—confirm that consultation has taken place with Alberta Community Development. If a historical and/or archaeological impact assessment is required, briefly describe any historical or archaeological sites and parks along the routes, with emphasis on major features close to or traversed by the route.

38) For proposed route(s) and possible alternatives that will result in significant environmental impacts:

    i) Describe the environmental evaluation of the study area, identifying the environmental factors leading to the selection of the proposed route(s).

    ii) Show the major land-use and resource features (e.g., agriculture, residences, recreation, forestry, fish, wildlife, and visual and sensitive areas) for each route in a table in appropriate units (by kilometre, total number, etc.). Provide supporting written discussion showing the significance of impacts upon each major land-use and resource feature for each route.

iii) Present an overall comparison of the environmental impacts and costs associated with the alternative routes and proposed route and identify the environmentally preferred route.

iv) Summarize any discussions with municipalities held to ensure compatibility of the proposed facility with various municipal services if a proposed transmission line passes through or immediately adjacent to an urban centre.

6.2.5 Economic Assessment

39) Provide a detailed cost breakdown of all alternatives on a common basis. Where identifiable, include costs to be borne by persons other than the applicant and the applicant's customer(s) in the comparison.

7 Requirement for Industrial System Designation Applications

If you are applying for an industrial system designation, you must include the following background and technical information. These information requirements are derived from Section 4 of the *Hydro and Electric Energy Act*. Be sure to attach a covering *Directive 028* Schedule 1 with your application.

7.1 Legislation

1) Identify the sections of the *Hydro and Electric Energy Act* (Revised Statutes of Alberta 2000) under which the application is made.

2) State the approvals that you are applying for from the EUB.

3) Provide a list of existing approvals for facilities directly affected by this project, if any.

4) Provide a list of companies that may be affected by your project, confirm that these companies have no concerns regarding your application, and indicate which other agreements are necessary to carry out your project.

7.2 Industrial System Description

5) Provide a detailed description of the overall industrial process, and include a list of the companies that own or operate different aspects of the industrial process.

6) Explain how the industrial operations process a feedstock, produce a primary product, or manufacture a product. Describe the integration of the industrial system, showing how the output of each component within the industrial operation is used by that operation and is necessary to constitute its final products.

7) Demonstrate that there is a high degree of integration of the electric system with one or more industrial operations that the electric system forms part of and serves.

8) Explain the degree of integration of the management of the components and processes of the industrial operations.

9) Provide block diagrams showing electrical, natural gas, steam, water, and feedstock flows between the different blocks representing processes. Appropriate units of measurement should indicate flows (for example, megawatts for electric flows, cubic metres per second for gas and water flows). Also include in these diagrams the volumes consumed or produced by each process block.

10) Provide a complete list of all electric facilities and equipment of 25 kV or more to be included in the industrial system designation.

11) Provide an electrical single-line diagram of the entire industrial complex. This diagram should clearly show existing facilities, future facilities, and their ownership.

12) Verify that the electric system includes at least one generating unit that has substantial capacity in comparison with the on-site load and is located on the property of one or more industrial operations it is intended to serve.

13) Explain how the designation supports both a) the development of the economical supply of generation to meet the requirements of integrated industrial processes and b) the efficient exchange with the interconnected electric system of electric energy that is in excess of the industrial system's own requirements.

14) Demonstrate, by way of an economic comparison, that the internal supply through on-site generation is the most economic source of power for the industrial system. For example, if the industrial system uses cogeneration to produce electric and thermal energy, you should provide a comparison of the costs of the internal supply of electricity and process heat with the alternative of contracting electrical supply from the Alberta Electric System and installing in situ heat exchangers or boilers to satisfy the thermal requirements of the industrial process.

15) Explain how your proposal meets the principle that the designation supports the location of generation and consumption so that the efficiency of the interconnected electric system is improved, including improved voltage stability and reduction of losses and congestion on transmission. Elaborate on how your application achieves this principle and provide your assessment of losses and congestion on transmission lines due to the electric power that the industrial complex would supply to the Alberta Electric System. The assessment should also take into account other existing generation and generation under construction.

16) Provide a thermal energy balance to demonstrate that there is significant and sustained increase in efficiency in the process of the industrial operation or in the production and consumption of electric energy by the industrial operation as a result of the integration of the electric system with the industrial operations the electric system forms part of and serves.

17) Demonstrate that the designation does not facilitate the development of independent electric systems that attempt to avoid costs associated with the interconnected electric system, and does not facilitate uneconomical bypass of the interconnected electric system.

18) Demonstrate that the designation would not result in duplication of the interconnected electric system where it is more economical to use the transmission facilities or electric distribution system owned by persons in whose service area the industrial system is or will be located.

19) Demonstrate that there is significant investment in both the expansion or extension of the industrial operations processes and the development of the electricity supply.

20) If your industrial operation extends beyond the contiguous property of the industrial complex, provide information to satisfy the EUB that the overall cost of providing the owner's own distribution or transmission facilities to interconnect the integral parts of the industrial operation is equal to or less than the tariffs applicable for distribution or transmission in the service area where the industrial operation is located.

7.3 Participant Involvement

21) Describe the participant notification and involvement programs that you have conducted.

22) List all stakeholders that you contacted as part of your participant notification and involvement program.

23) Supply a mailing list of those in (22) above, complete with two sets of mailing labels.

24) Identify any parties who expressed concerns about the application and the specifics of their concerns.

25) Summarize discussions held with potentially directly and adversely affected parties.

26) If potentially directly and adversely affected parties raised any concerns, describe how you dealt with or will deal with them.

27) For those potentially directly and adversely affected parties identified above, include a confirmation of resolution of the concerns, if applicable.

7.4 Maps, Drawings, and Other Documents

28) Provide a legible plant site drawing showing all major components of the industrial operation.

29) Provide a legible map showing the location of major electric facilities, such as power plants, transmission lines, and substations.

30) Provide a legible map of the project area suitable for use in public notice.